

OIPE

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/990,046

DATE: 01/15/2002

TIME: 18:55:44

Input Set : N:\Crif3\RULE60\09990046.raw
 Output Set: N:\CRF3\01152002\I990046.raw

1 <110> APPLICANT: de Sauvage, Frederic
 2 Carpenter, David A.
 3 <120> TITLE OF INVENTION: Patched-2
 4 <130> FILE REFERENCE: P1405R1
 5 <140> CURRENT APPLICATION NUMBER: US/09/990,046
 6 <141> CURRENT FILING DATE: 2001-11-20
 7 <150> PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 09/293,505
 W--> 8 <151> PRIOR FILING DATE: EARLIER FILING DATE: 1999-04-15
 9 <160> NUMBER OF SEQ ID NOS: 32

11 <210> SEQ ID NO: 1
 12 <211> LENGTH: 4030
 13 <212> TYPE: DNA
 14 <213> ORGANISM: Homo sapiens
 15 <400> SEQUENCE: 1

| | | |
|----|--|------|
| 16 | gttatttcag gccatggtgt tgcgccgaat taattcccga tccagacatg | 50 |
| 17 | ataagataca ttgatgagtt tggacaaacc acaactagaa tgcagtga | 100 |
| 18 | aaaatgcttt atttgtgaaa tttgtgatgc tattgcttta tttgtaacca | 150 |
| 19 | ttataagctg caataaaciaa gttgggccat ggccggccaag cttctgcagg | 200 |
| 20 | tgcactctag aggatccccg ggggaattccg gcatgactcg atcgccgccc | 250 |
| 21 | ctcagagagc tgcccccgag ttacacaccc ccagctcgaa ccgcagcacc | 300 |
| 22 | ccagatccta gctgggagcc tgaaggctcc actctggctt cgtgcttact | 350 |
| 23 | tccagggcct gctcttctct ctgggatgcg ggatccagag acattgtggc | 400 |
| 24 | aaagtgtctt ttctgggact gttggccttt ggggcccttg cattaggtct | 450 |
| 25 | ccgcatggcc attattgaga caaacttgga acagctctgg gtagaagtgg | 500 |
| 26 | gcagccgggt gagccaggag ctgcattaca ccaaggagaa gctgggggag | 550 |
| 27 | gaggctgcat acacctctca gatgctgata cagaccgcac gccaggaggg | 600 |
| 28 | agagaacatc ctacaccccg aagcaccttg cctccacctc caggcagccc | 650 |
| 29 | tactgcccag taaagtccaa gtatcactct atgggaagtc ctgggatttg | 700 |
| 30 | aacaaaatct gctacaagtc aggagttccc cttattgaaa atggaatgat | 750 |
| 31 | tgagtggatg attgagaagc tgtttccgtg cgtgatectc acccccctcg | 800 |
| 32 | actgcttctg ggagggagcc aaactccaag ggggctccgc ctacctgcc | 850 |
| 33 | ggccgcccgg atatccagtg gaccaacctg gatccagagc agctgctgga | 900 |
| 34 | ggagctgggt ccctttgcct cccttgaggg cttccgggag ctgctagaca | 950 |
| 35 | aggcacaggt gggccaggcc taogtggggc ggccctgtct gcacctgat | 1000 |
| 36 | gacctccact gccacactag tgcccccaac catcacagca ggcaggctcc | 1050 |
| 37 | caatgtggct cagcagctga gtgggggctg ccatggcttc tcccacaaat | 1100 |
| 38 | tcatgcactg gcaggaggaa ttgctgctgg gaggcatggc cagagacccc | 1150 |
| 39 | caaggagagc tgcagagggc agaggccctg cagagcacct tcttgctgat | 1200 |
| 40 | gagtccccgc cagctgtacg agcatttccg ggggtgactat cagacacatg | 1250 |
| 41 | acattggctg gagtgaggag caggccagca cagtgtaca agcctggcag | 1300 |
| 42 | cggcgctttg tgcagctggc ccaggaggcc ctgcctgaga acgcttccca | 1350 |
| 43 | gcagatccat gccttctcct ccaccaccct ggatgacatc ctgcatgcgt | 1400 |
| 44 | tctctgaagt cagtgtgcc cgtgtgggtg gaggctatct gctcatgctg | 1450 |
| 45 | gcctatgcct gtgtgaccat gctgcgggtg gactgcgccc agtcccagg | 1500 |
| 46 | ttccgtgggc cttgccgggg tactgtggtt ggccctggcg gtggcctcag | 1550 |
| 47 | gccttgggct ctgtgcctg ctcggcatca ccttcaatgc tgccactacc | 1600 |
| 48 | caggtgctgc ctttcttggc tctgggaatc ggcgtggatg acgtattcct | 1650 |

RAW SEQUENCE LISTING

DATE: 01/15/2002

PATENT APPLICATION: US/09/990,046

TIME: 18:55:44

Input Set : N:\Crif3\RULE60\09990046.raw

Output Set: N:\CRF3\01152002\I990046.raw

```

49 gctggcgcat gcttcacag aggtctgcc tggcaccct ctccaggagc 1700
50 gcatgggcca gtgtctgcag cgcacgggca ccagtgtcgt actcacatcc 1750
51 atcaacaaca tggcgcgctt cctcatggct gccctcgttc ccatccctgc 1800
52 gctgcgagcc ttctccctac aggcggccat agtggttggc tgcacctttg 1850
53 tagccgtgat gcttgtcttc ccagccatcc tcagcctgga cctacggcgg 1900
54 cgccactgcc agcgccctga tgtgtctgc tgcctctcca gtccctgtct 1950
55 tgctcaggtg attcagatcc tgccccagga gctgggggac gggacagtac 2000
56 cagtgggcat tggccacctc actgccacag ttcaagcctt taccactgt 2050
57 gaagccagca gccagcatgt ggtcaccatc ctgcctcccc aagcccaoct 2100
58 ggtgccccca ccttctgacc cactgggctc tgagctcttc agccctggag 2150
59 ggtccacacg ggaccttcta ggccaggagg aggagacaag gcagaaggca 2200
60 gctgcaagt cctgccttg tccccgtgg aatcttggcc atttcgccc 2250
61 ctatcagttt gcccgttgcc tgcctcagtc acatgccaag gccatcgtgc 2300
62 tgggtgctct tgggtgctct ctgggctga gctctacgg agccaccttg 2350
63 gtgcaagacg gctggccct gacggatgtg gtgcctcggg gcaccaagga 2400
64 gcatgccttc ctgagcgccc agctcaggta cttctccctg tacgaggtgg 2450
65 ccctggtgac ccagggtggc ttgactacg cccattccca acgcgccttc 2500
66 tttgatctgc accagcgctt cagttccctc aaggcgggtg tgcctccacc 2550
67 ggccaccag gcaccccgca cctggtgca ctattaccgc aactggctac 2600
68 agggaatcca ggctgcctt gaccaggact gggcttctgg gcgcatacc 2650
69 cgccactcgt accgcaatgg ctctgaggat ggggcccctg cctacaagct 2700
70 gctcatccag actggagacg cccaggagcc tctggatttc agccagctga 2750
71 ccacaaggaa gctggtgagc agagagggac tgattccacc cgagctcttc 2800
72 tacatggggc tgaccgtgtg ggtgagcagt gacccctgg gtctggcagc 2850
73 ctcacaggcc aacttctacc cccacctcc tgaatggctg cagcacaat 2900
74 acgacaccac gggggagaac cttcgcatcc cgccagctca gcccttgag 2950
75 tttgcccagt tccccttctt gctgcgtggc ctccagaaga ctgcagactt 3000
76 tgtggaggcc atcgagggg cccgggcagc atgcgcagag gccggccagg 3050
77 ctggggtgca cgctacccc agcggctccc ccttctctt ctgggaacag 3100
78 tatctgggcc tggcgctg ctctctgctg gcctctgca tctgtctggt 3150
79 gtgcactttc ctgctctgtg ctctgctgct cctcaacccc tggacggctg 3200
80 gcctcatagt gctggtcctg gcgatgatga cagtggaaact ctttgggtatc 3250
81 atgggtttcc tgggcatcaa gctgagtgcc atcccctgg tgateccttg 3300
82 ggctctgta ggcattggcg ttgagttcac agtccacgtg gctctgggt 3350
83 tctgaccac ccaggggcagc cggaacctgc gggccgcca tgccttgag 3400
84 cacacatttg ccccgtgac cgatggggcc atctccacat tgcctgggtct 3450
85 gctcatgctt gctggttccc actttgactt cattgtaagg tacttctttg 3500
86 cggcgtgac agtgcacg ctctggggcc tctccatgg actcgtgctg 3550
87 ctgctgtgc tgcgtccat cctgggccc cgccagagg tgatacagat 3600
88 gtacaaggaa agcccagaga tctgagtc accagctcca cagggaggcg 3650
89 ggcttaggtg gggggcatcc tctccctgc cccagagctt tgccagagt 3700
90 actacctcca tgacctggc catccaccca cccccctgc ctggtgccta 3750
91 catccatcca gccctgatg agcccccttg gtcccctgct gccactagct 3800
92 ctggcaacct cagttccagg ggaccaggtc cagccactgg gtgaaagagc 3850
93 agctgaagca cagagaccat gtgtggggcg tgtgggtca ctgggaagca 3900
94 ctgggtctgg ttttagacg aggacggacc cctggagggc cctgctgctg 3950
95 ctgcatcccc tctcccgacc cagctgtcat gggcctccct gatatagaat 4000
96 tcaatcgata gaaccgaggt gcagttggac 4030
98 <210> SEQ ID NO: 2

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/990,046

DATE: 01/15/2002

TIME: 18:55:44

Input Set : N:\Crf3\RULE60\09990046.raw

Output Set: N:\CRF3\01152002\I990046.raw

```

99 <211> LENGTH: 1203
100 <212> TYPE: PRT
101 <213> ORGANISM: Homo sapiens
102 <400> SEQUENCE: 2
103   Met Thr Arg Ser Pro Pro Leu Arg Glu Leu Pro Pro Ser Tyr Thr
104       1           5           10           15
105   Pro Pro Ala Arg Thr Ala Ala Pro Gln Ile Leu Ala Gly Ser Leu
106       20           25           30
107   Lys Ala Pro Leu Trp Leu Arg Ala Tyr Phe Gln Gly Leu Leu Phe
108       35           40           45
109   Ser Leu Gly Cys Gly Ile Gln Arg His Cys Gly Lys Val Leu Phe
110       50           55           60
111   Leu Gly Leu Leu Ala Phe Gly Ala Leu Ala Leu Gly Leu Arg Met
112       65           70           75
113   Ala Ile Ile Glu Thr Asn Leu Glu Gln Leu Trp Val Glu Val Gly
114       80           85           90
115   Ser Arg Val Ser Gln Glu Leu His Tyr Thr Lys Glu Lys Leu Gly
116       95          100          105
117   Glu Glu Ala Ala Tyr Thr Ser Gln Met Leu Ile Gln Thr Ala Arg
118      110          115          120
119   Gln Glu Gly Glu Asn Ile Leu Thr Pro Glu Ala Leu Gly Leu His
120      125          130          135
121   Leu Gln Ala Ala Leu Thr Ala Ser Lys Val Gln Val Ser Leu Tyr
122      140          145          150
123   Gly Lys Ser Trp Asp Leu Asn Lys Ile Cys Tyr Lys Ser Gly Val
124      155          160          165
125   Pro Leu Ile Glu Asn Gly Met Ile Glu Trp Met Ile Glu Lys Leu
126      170          175          180
127   Phe Pro Cys Val Ile Leu Thr Pro Leu Asp Cys Phe Trp Glu Gly
128      185          190          195
129   Ala Lys Leu Gln Gly Gly Ser Ala Tyr Leu Pro Gly Arg Pro Asp
130      200          205          210
131   Ile Gln Trp Thr Asn Leu Asp Pro Glu Gln Leu Leu Glu Glu Leu
132      215          220          225
133   Gly Pro Phe Ala Ser Leu Glu Gly Phe Arg Glu Leu Leu Asp Lys
134      230          235          240
135   Ala Gln Val Gly Gln Ala Tyr Val Gly Arg Pro Cys Leu His Pro
136      245          250          255
137   Asp Asp Leu His Cys Pro Pro Ser Ala Pro Asn His His Ser Arg
138      260          265          270
139   Gln Ala Pro Asn Val Ala His Glu Leu Ser Gly Gly Cys His Gly
140      275          280          285
141   Phe Ser His Lys Phe Met His Trp Gln Glu Glu Leu Leu Leu Gly
142      290          295          300
143   Gly Met Ala Arg Asp Pro Gln Gly Glu Leu Leu Arg Ala Glu Ala
144      305          310          315
145   Leu Gln Ser Thr Phe Leu Leu Met Ser Pro Arg Gln Leu Tyr Glu
146      320          325          330
147   His Phe Arg Gly Asp Tyr Gln Thr His Asp Ile Gly Trp Ser Glu

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/990,046

DATE: 01/15/2002

TIME: 18:55:44

Input Set : N:\Crf3\RULE60\09990046.raw

Output Set: N:\CRF3\01152002\I990046.raw

| | | | | | | |
|-----|-----------------|---------------------|---------------------|-----|--|-----|
| 148 | | 335 | | 340 | | 345 |
| 149 | Glu Gln Ala Ser | Thr Val Leu Gln Ala | Trp Gln Arg Arg Phe | Val | | |
| 150 | | 350 | | 355 | | 360 |
| 151 | Gln Leu Ala Gln | Glu Ala Leu Pro Glu | Asn Ala Ser Gln Gln | Ile | | |
| 152 | | 365 | | 370 | | 375 |
| 153 | His Ala Phe Ser | Ser Thr Thr Leu Asp | Asp Ile Leu His Ala | Phe | | |
| 154 | | 380 | | 385 | | 390 |
| 155 | Ser Glu Val Ser | Ala Ala Arg Val Val | Gly Gly Tyr Leu Leu | Met | | |
| 156 | | 395 | | 400 | | 405 |
| 157 | Leu Ala Tyr Ala | Cys Val Thr Met Leu | Arg Trp Asp Cys Ala | Gln | | |
| 158 | | 410 | | 415 | | 420 |
| 159 | Ser Gln Gly Ser | Val Gly Leu Ala Gly | Val Leu Leu Val Ala | Leu | | |
| 160 | | 425 | | 430 | | 435 |
| 161 | Ala Val Ala Ser | Gly Leu Gly Leu Cys | Ala Leu Leu Gly Ile | Thr | | |
| 162 | | 440 | | 445 | | 450 |
| 163 | Phe Asn Ala Ala | Thr Thr Gln Val Leu | Pro Phe Leu Ala Leu | Gly | | |
| 164 | | 455 | | 460 | | 465 |
| 165 | Ile Gly Val Asp | Asp Val Phe Leu Leu | Ala His Ala Phe Thr | Glu | | |
| 166 | | 470 | | 475 | | 480 |
| 167 | Ala Leu Pro Gly | Thr Pro Leu Gln Glu | Arg Met Gly Glu Cys | Leu | | |
| 168 | | 485 | | 490 | | 495 |
| 169 | Gln Arg Thr Gly | Thr Ser Val Val Leu | Thr Ser Ile Asn Asn | Met | | |
| 170 | | 500 | | 505 | | 510 |
| 171 | Ala Ala Phe Leu | Met Ala Ala Leu Val | Pro Ile Pro Ala Leu | Arg | | |
| 172 | | 515 | | 520 | | 525 |
| 173 | Ala Phe Ser Leu | Gln Ala Ala Ile Val | Val Gly Cys Thr Phe | Val | | |
| 174 | | 530 | | 535 | | 540 |
| 175 | Ala Val Met Leu | Val Phe Pro Ala Ile | Leu Ser Leu Asp Leu | Arg | | |
| 176 | | 545 | | 550 | | 555 |
| 177 | Arg Arg His Cys | Gln Arg Leu Asp Val | Leu Cys Cys Phe Ser | Ser | | |
| 178 | | 560 | | 565 | | 570 |
| 179 | Pro Cys Ser Ala | Gln Val Ile Gln Ile | Leu Pro Gln Glu Leu | Gly | | |
| 180 | | 575 | | 580 | | 585 |
| 181 | Asp Gly Thr Val | Pro Val Gly Ile Ala | His Leu Thr Ala Thr | Val | | |
| 182 | | 590 | | 595 | | 600 |
| 183 | Gln Ala Phe Thr | His Cys Glu Ala Ser | Ser Gln His Val Val | Thr | | |
| 184 | | 605 | | 610 | | 615 |
| 185 | Ile Leu Pro Pro | Gln Ala His Leu Val | Pro Pro Pro Ser Asp | Pro | | |
| 186 | | 620 | | 625 | | 630 |
| 187 | Leu Gly Ser Glu | Leu Phe Ser Pro Gly | Gly Ser Thr Arg Asp | Leu | | |
| 188 | | 635 | | 640 | | 645 |
| 189 | Leu Gly Gln Glu | Glu Glu Thr Arg Gln | Lys Ala Ala Cys Lys | Ser | | |
| 190 | | 650 | | 655 | | 660 |
| 191 | Leu Pro Cys Ala | Arg Trp Asn Leu Ala | His Phe Ala Arg Tyr | Gln | | |
| 192 | | 665 | | 670 | | 675 |
| 193 | Phe Ala Pro Leu | Leu Leu Gln Ser His | Ala Lys Ala Ile Val | Leu | | |
| 194 | | 680 | | 685 | | 690 |
| 195 | Val Leu Phe Gly | Ala Leu Leu Gly Leu | Ser Leu Tyr Gly Ala | Thr | | |
| 196 | | 695 | | 700 | | 705 |

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/990,046

DATE: 01/15/2002

TIME: 18:55:44

Input Set : N:\Crf3\RULE60\09990046.raw

Output Set: N:\CRF3\01152002\I990046.raw

| | | | |
|-----|---|------|-----------|
| 197 | Leu Val Gln Asp Gly Leu Ala Leu Thr Asp Val Val Pro Arg Gly | | |
| 198 | | 710 | 715 720 |
| 199 | Thr Lys Glu His Ala Phe Leu Ser Ala Gln Leu Arg Tyr Phe Ser | | |
| 200 | | 725 | 730 735 |
| 201 | Leu Tyr Glu Val Ala Leu Val Thr Gln Gly Gly Phe Asp Tyr Ala | | |
| 202 | | 740 | 745 750 |
| 203 | His Ser Gln Arg Ala Leu Phe Asp Leu His Gln Arg Phe Ser Ser | | |
| 204 | | 755 | 760 765 |
| 205 | Leu Lys Ala Val Leu Pro Pro Pro Ala Thr Gln Ala Pro Arg Thr | | |
| 206 | | 770 | 775 780 |
| 207 | Trp Leu His Tyr Tyr Arg Asn Trp Leu Gln Gly Ile Gln Ala Ala | | |
| 208 | | 785 | 790 795 |
| 209 | Phe Asp Gln Asp Trp Ala Ser Gly Arg Ile Thr Arg His Ser Tyr | | |
| 210 | | 800 | 805 810 |
| 211 | Arg Asn Gly Ser Glu Asp Gly Ala Leu Ala Tyr Lys Leu Leu Ile | | |
| 212 | | 815 | 820 825 |
| 213 | Gln Thr Gly Asp Ala Gln Glu Pro Leu Asp Phe Ser Gln Leu Thr | | |
| 214 | | 830 | 835 840 |
| 215 | Thr Arg Lys Leu Val Asp Arg Glu Gly Leu Ile Pro Pro Glu Leu | | |
| 216 | | 845 | 850 855 |
| 217 | Phe Tyr Met Gly Leu Thr Val Trp Val Ser Ser Asp Pro Leu Gly | | |
| 218 | | 860 | 865 870 |
| 219 | Leu Ala Ala Ser Gln Ala Asn Phe Tyr Pro Pro Pro Pro Glu Trp | | |
| 220 | | 875 | 880 885 |
| 221 | Leu His Asp Lys Tyr Asp Thr Thr Gly Glu Asn Leu Arg Ile Pro | | |
| 222 | | 890 | 895 900 |
| 223 | Pro Ala Gln Pro Leu Glu Phe Ala Gln Phe Pro Phe Leu Leu Arg | | |
| 224 | | 905 | 910 915 |
| 225 | Gly Leu Gln Lys Thr Ala Asp Phe Val Glu Ala Ile Glu Gly Ala | | |
| 226 | | 920 | 925 930 |
| 227 | Arg Ala Ala Cys Ala Glu Ala Gly Gln Ala Gly Val His Ala Tyr | | |
| 228 | | 935 | 940 945 |
| 229 | Pro Ser Gly Ser Pro Phe Leu Phe Trp Glu Gln Tyr Leu Gly Leu | | |
| 230 | | 950 | 955 960 |
| 231 | Arg Arg Cys Phe Leu Leu Ala Val Cys Ile Leu Leu Val Cys Thr | | |
| 232 | | 965 | 970 975 |
| 233 | Phe Leu Val Cys Ala Leu Leu Leu Leu Asn Pro Trp Thr Ala Gly | | |
| 234 | | 980 | 985 990 |
| 235 | Leu Ile Val Leu Val Leu Ala Met Met Thr Val Glu Leu Phe Gly | | |
| 236 | | 995 | 1000 1005 |
| 237 | Ile Met Gly Phe Leu Gly Ile Lys Leu Ser Ala Ile Pro Val Val | | |
| 238 | | 1010 | 1015 1020 |
| 239 | Ile Leu Val Ala Ser Val Gly Ile Gly Val Glu Phe Thr Val His | | |
| 240 | | 1025 | 1030 1035 |
| 241 | Val Ala Leu Gly Phe Leu Thr Thr Gln Gly Ser Arg Asn Leu Arg | | |
| 242 | | 1040 | 1045 1050 |
| 243 | Ala Ala His Ala Leu Glu His Thr Phe Ala Pro Val Thr Asp Gly | | |
| 244 | | 1055 | 1060 1065 |
| 245 | Ala Ile Ser Thr Leu Leu Gly Leu Leu Met Leu Ala Gly Ser His | | |

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/990,046

DATE: 01/15/2002

TIME: 18:55:45

Input Set : N:\Crf3\RULE60\09990046.raw

Output Set: N:\CRF3\01152002\I990046.raw

L:8 M:256 W: Invalid Numeric Header Field, Wrong Prior FILING DATE:YYYY-MM-DD
L:271 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:3
L:275 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:277 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:278 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:279 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:304 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:5
L:310 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:317 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:6
L:321 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6